WHOLESALE DISTRIBUTION of CITRUS FRUITS in Five Terminal Markets December 1946-March 1947

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COOPERATIVE RESEARCH AND SERVICE DIVISION
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SUMMARY

Wholesaling citrus fruits is an important intermediate step in distributing citrus fruit from the grower to the consumer. Carlots and trucklots must be broken into smaller lots for retailers, some of whom require only a few boxes a week while others need many times that amount. Various kinds, sizes, and grades of citrus fruits must be stocked by each handler in order to supply the particular requirements of his customers. The size of the market, its geographical position with respect to the several citrus producing areas, the condition or strength of the market, and the buying habits of consumers are some of the factors affecting the operations of individual wholesalers.

Distribution channels for citrus fruits in the 5 markets studied were complex and the larger the market the more intricate the pattern. In New York, only 21 percent of the California oranges was handled direct from shipper to wholesaler to retailer; in Chicago, 29 percent; Cleveland, 47 percent; Kansas City, 44 percent, and Indianapolis, 72 percent. A similar relationship was found for other types of citrus fruit. Chain stores that maintained their own wholesale warehouses, and large service wholesalers, usually located outside the terminal market, distributed considerable quantities of citrus fruits direct from shipper to warehouse to retail stores. An expansion of the type of operation now conducted by large service wholesalers should bring about a more direct and orderly distribution of citrus as well as other fresh fruits and vegetables.

Carlot and trucklot wholesalers used a number of sales methods for fruit received direct from shippers. Outright purchases of carlots or trucklots predominated in all markets except Chicago. In Chicago almost 80 percent of the carlot and trucklot receipts of wholesalers was handled on a commission or joint account basis. This included both California and Florida and Texas fruit. Except in Chicago, California citrus fruits received direct from shippers were either purchased outright or bought through brokers. Brokers were important factors in the two private sale markets,[1] Kansas City and Indianapolis, but sold relatively small amounts of citrus to wholesalers in the auction markets.

The average margin per box for handling all citrus fruits was 44 cents for wholesalers,[2] 58 cents for service wholesalers, and 61 cents for jobbers. The average margin of all types of handlers, except chain warehouses, was 41 cents for California oranges, 51 cents for Florida and Texas oranges, 42 cents for grapefruit, and 68 cents for lemons. Margins ranged from below 20 cents to more than 80 cents a box. Approximately 50 percent of all handlers had margins from 20 to 60 cents a box, 15 percent had margins below 20 cents and 35 percent above 60 cents.

The estimated operating costs of any one type of wholesale handler included in this study do not appear to be high in relation to the other

[1]Markets which do not have a terminal fruit auction.
[2]For definition of wholesaler, jobber, and other handlers see appendix.

types of handlers. The study showed that duplication of services and functions, such as inter-market transportation, brought about mainly by antiquated physical facilities, contributed more to excessive wholesaling costs than any inefficiency that could be found in the individual operations of wholesalers.

Wholesale costs could be materially reduced by replacing the inadequate facilities in four of these cities. Modernized markets should be designed for direct rail unloading into wholesale stores. These terminals should have adequate street space for maneuvering large trailer trucks, and have individual units designed for the use of conveyers, pallets, and other mechanized handling equipment.

WHOLESALE DISTRIBUTION OF CITRUS FRUITS IN FIVE TERMINAL MARKETS, DECEMBER 1946 - MARCH 1947

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Cooperatives pack and sell from 50 to 60 percent of the fresh citrus fruit produced in the United States. This fruit may be sold through terminal sales offices of a farmers cooperative, through brokers, at the terminal fruit auctions, direct to wholesalers and chain store buyers, or to cash buyers. Cooperatives need information on the movement of citrus beyond their immediate market outlet in order to plan and conduct their marketing programs to maximize sales and increase returns to growers.

This study was undertaken at the request of citrus marketing cooperatives and was designed to provide information on citrus fruit distribution, methods of handling and costs and margins for various types of wholesale handlers in five terminal markets. This report describes the methods of purchasing citrus fruits at wholesale, channels of distribution, margins taken by various types of wholesale handlers, and estimated costs of handling citrus fruits in New York, Chicago, Cleveland, Kansas City, and Indianapolis.

Information was obtained from 4 auction companies, 10 corporate chains, both local and national, 2 voluntary chains, 35 wholesalers, 10 service wholesalers, 21 jobbers and purveyors, and 5 truck jobbers in New York, Chicago, Cleveland, Kansas City and Indianapolis markets. The data from each include quantities of citrus fruits handled in four 1-week periods from December 1946 through March 1947, the source of supply, method of purchase, distribution of sales, prices paid and received, and estimated costs of operation.

Data on quantities purchased, method of purchase, and prices paid were recorded from invoices of the supplier. Information on quantities sold, type of buyer, and prices received were taken from sales slips.

The most difficult task in connection with assembling data was obtaining representative costs of handling citrus fruits from the various distributors. A number of handlers, such as corporate chains and some

NOTE: E. W. Cake, formerly Agricultural Economist, FCA, and now Executive Secretary, Association of Virginia Potato and Vegetable Growers, Norfolk, Va., participated in the planning of the project and assembled most of the data in New York City. The authors also desire to express appreciation to the wholesalers and officials of the auction companies and chain stores who supplied data pertaining to their organization, to M. C. Gay, formerly Economist in Charge, Fruit and Vegetable Section, Georgia Bender, and others in the Cooperative Research and Service Division for their suggestions and assistance.

large wholesalers, were able to furnish rather detailed costs of operation; many of the smaller wholesalers and jobbers, however, could supply only meager information on operating costs.

It also was difficult to properly allocate the cost of handling citrus fruits. However, estimates of the relative cost were obtained from chain warehouse managers and certain wholesalers. A number of handlers also were able to give a figure representing the average cost of handling a box of citrus since citrus fruits in many cases represented a substantial portion of their business.

MARKETING CHANNELS

The wholesale distribution of citrus fruit is complex and the larger the market the more intricate the distribution pattern. Figures 1 through 5 show the channels through which citrus fruits moved in these 5 terminal markets. In New York the auction was the focal point where almost 70 percent of the citrus fruit was sold, principally to jobbers, wholesalers, and out-of-town buyers. A smaller proportion of citrus was sold at auction in Chicago and Cleveland. In the latter two markets, greater quantities were received direct from shippers by wholesalers, chain warehouses, and service wholesalers.

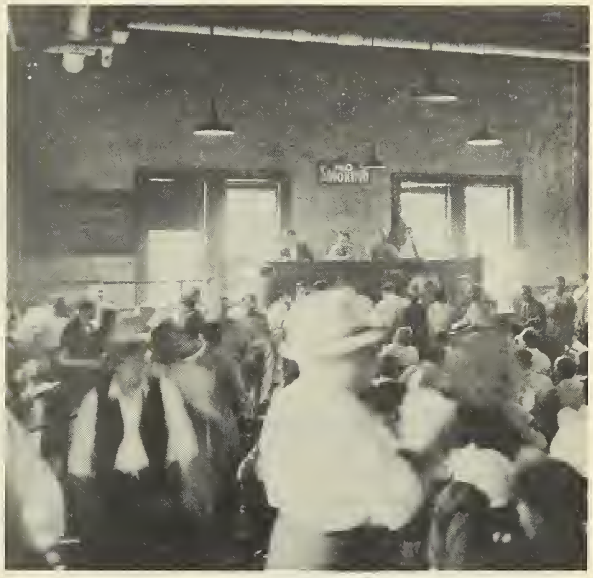
In each of these markets there were rather well defined channels through which most of the citrus fruit moved. Jobbers, purveyors, and truck jobbers who were important suppliers of independent retail stores, restaurants, and institutions had an insufficient volume of business to purchase citrus in carlots or trucklots and therefore bought in less than carload lots from the auction or wholesalers.

Most handlers also found it necessary to secure their supplies from more than one source in order to furnish customers with desired sizes and grades of fruit. For example, certain customers wanted brands of fruit sold only at auction, which made it necessary for the wholesaler to buy there although most of his supplies were obtained elsewhere. Wholesalers who bought in carlots also found it advantageous from time to time to buy small lots of fruit in order to have available a complete range in sizes and grades for their customers.

METHODS OF PURCHASE

The methods that carlot and trucklot wholesalers used in buying or handling citrus fruits are shown in table 1. In New York and Cleveland, they purchased approximately 75 percent of their citrus supplies at auction whereas in Chicago, wholesalers bought only about 35 percent at auction. Indianapolis wholesalers purchased about one-fourth of their citrus at auctions in distant markets. They patronized the Cincinnati auction to the greatest degree although some citrus also was obtained at the Chicago and St. Louis auctions.

Most of the citrus received direct from shippers was purchased outright either on an f.o.b. or delivered basis although considerable variation

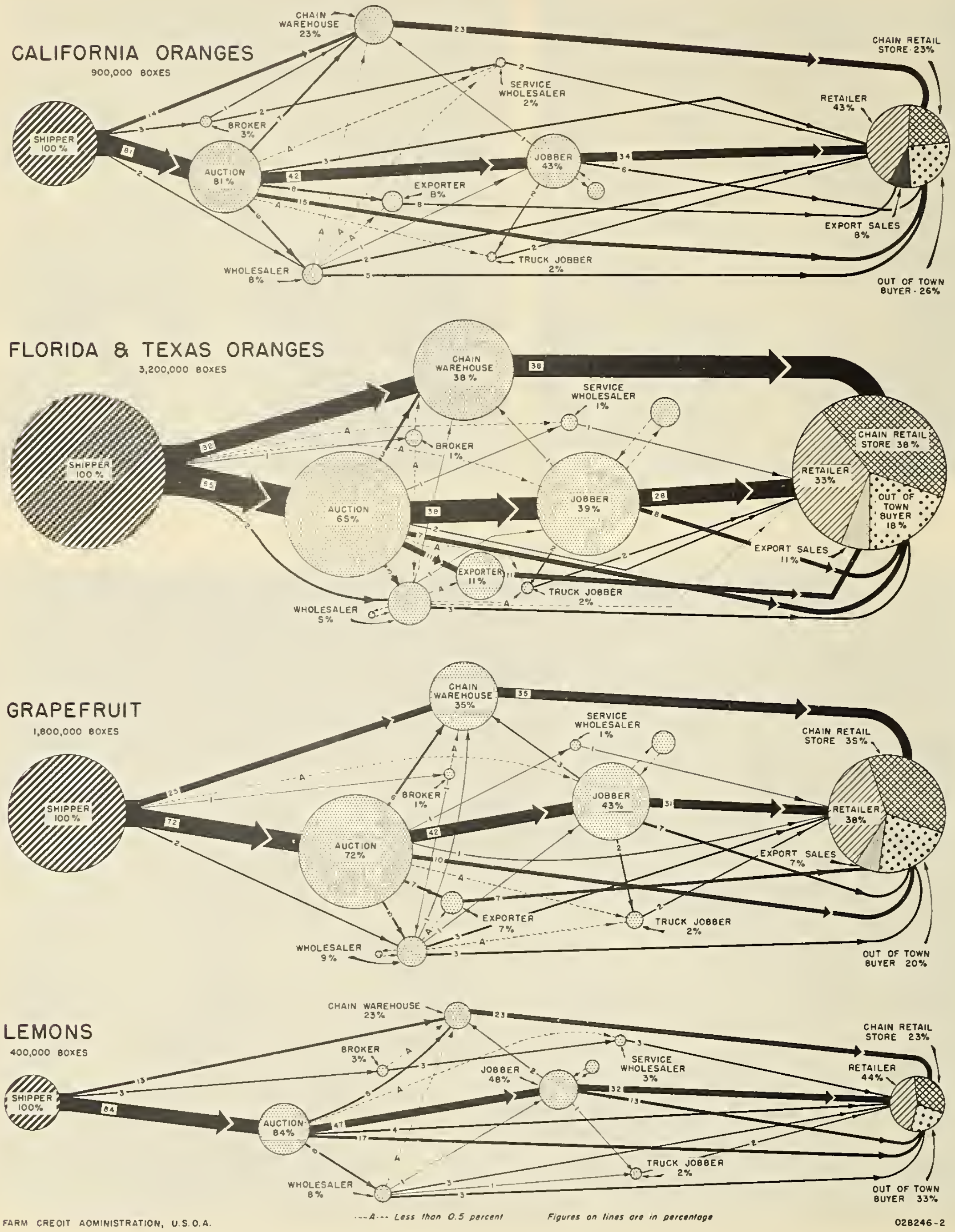


In New York, Chicago, and Cleveland, the terminal fruit auction was the most important outlet for citrus fruit shippers. In these markets approximately 70 percent of the California oranges, 60 percent of the Florida and Texas oranges and grapefruit, and 80 percent of the lemons were sold at auction during the period of this study.

FIGURE 1

NEW YORK: Marketing Channels for Citrus Fruits

December 1946 to March 1947

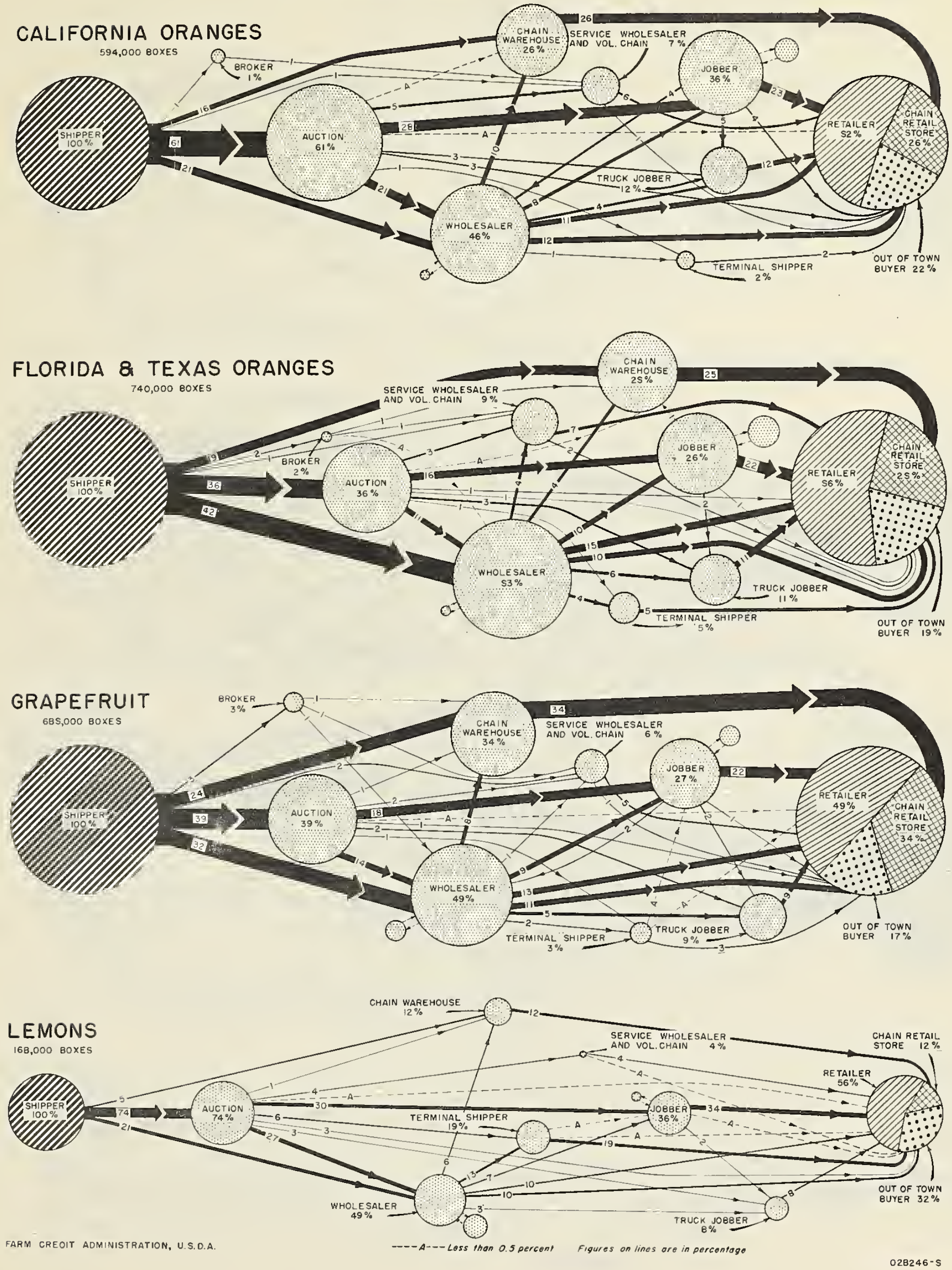


For each type of citrus fruit, the circles at the left and right represent the relative quantity sold from December 1946 through March 1947. The more important channels of distribution in New York were shipper-auction-jobber-retailer; shipper-chain warehouse-retail store and shipper-auction-out of town buyer. During this period approximately 10 percent of the citrus was exported from New York.

FIGURE 2

CHICAGO: Marketing Channels for Citrus Fruits

December 1946 to March 1947

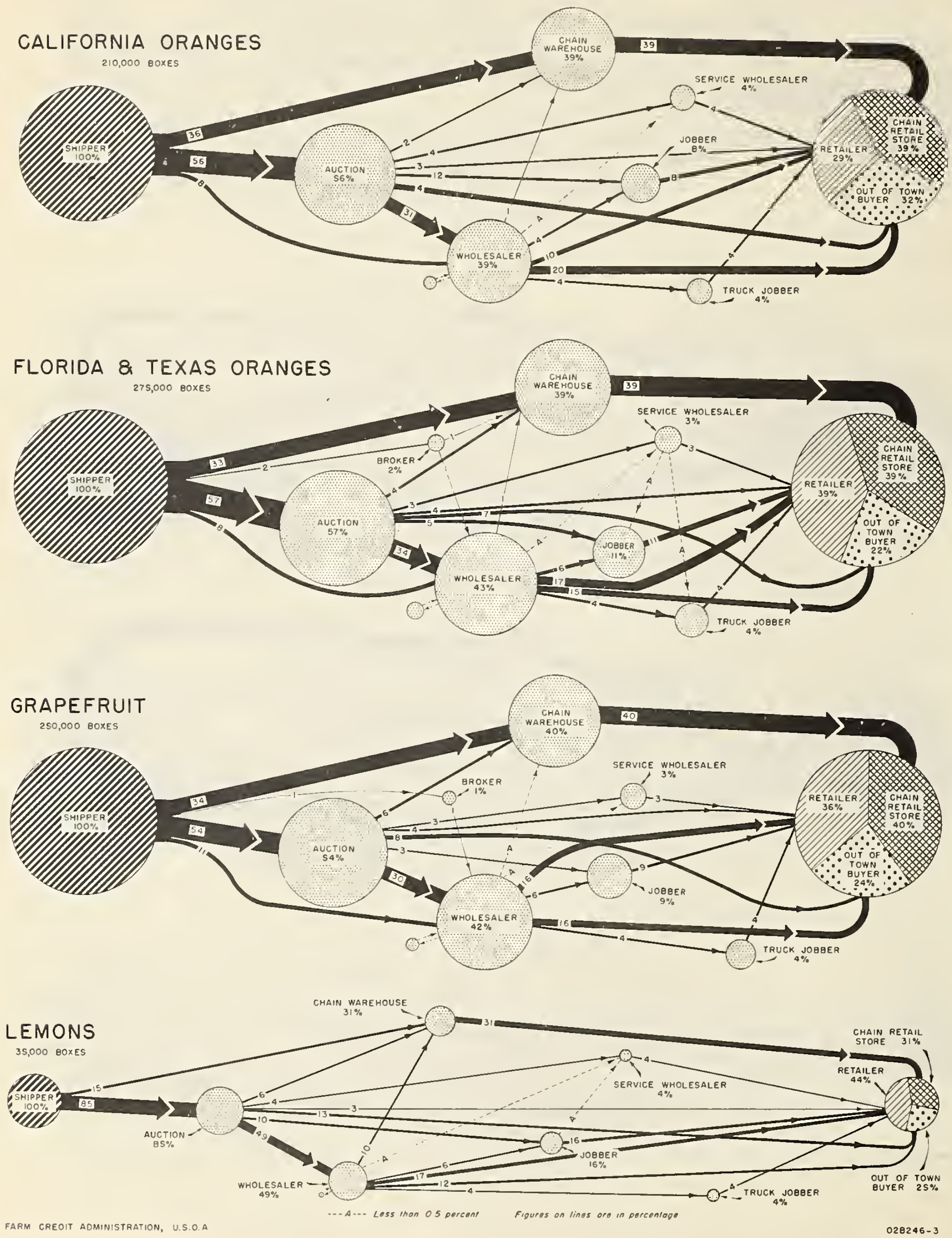


California shippers sold almost two-thirds of their citrus fruit at auction and one-third to wholesalers and chain warehouses, while Florida and Texas shippers sold almost two-thirds at private sale and slightly more than one-third at auction. Jobbers were the most important source of supply for retail buyers, followed by wholesalers, truck jobbers, and service wholesalers.

FIGURE 3

CLEVELAND: Marketing Channels for Citrus Fruits

December 1946 to March 1947

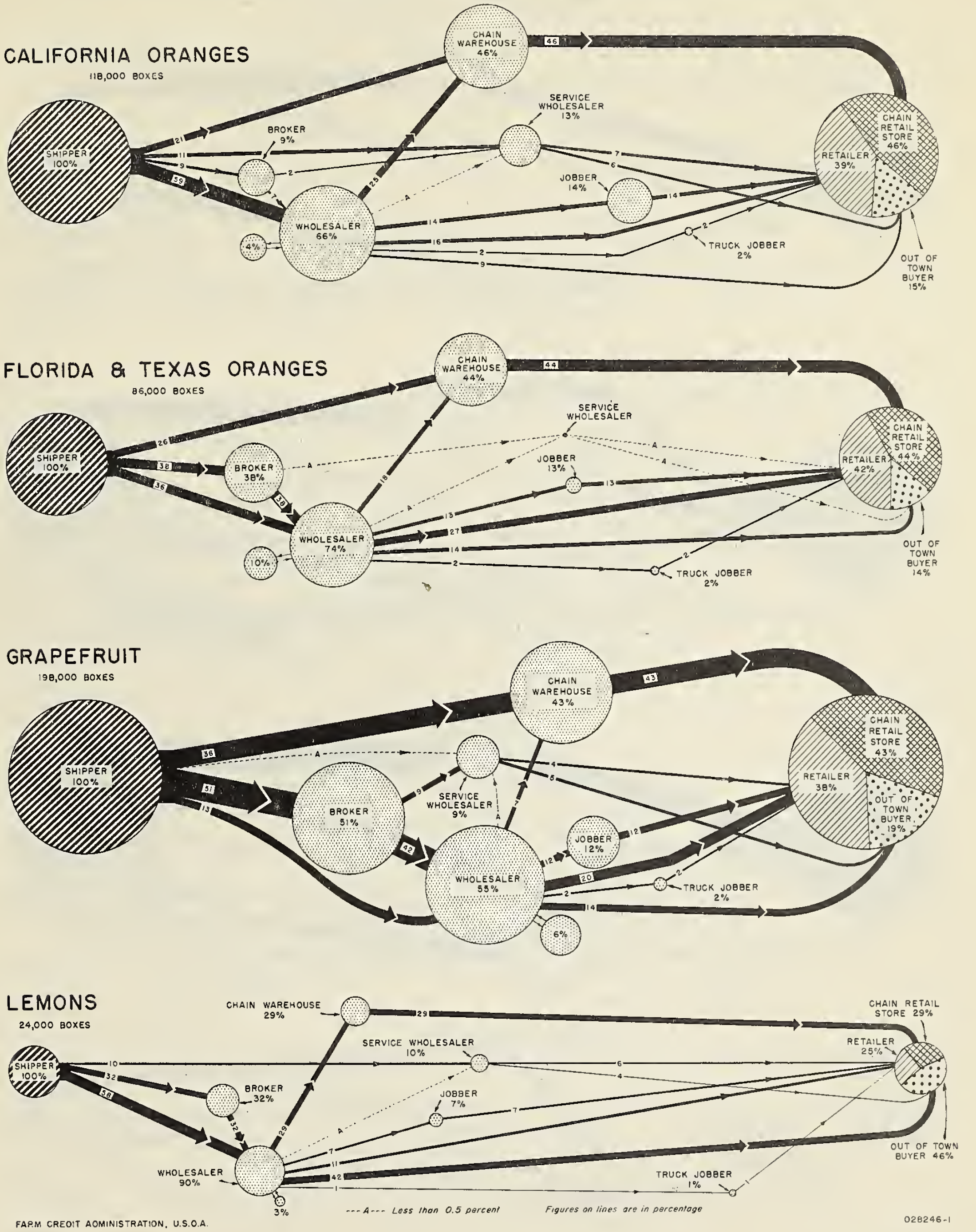


Chain warehouses handled almost 40 percent of the citrus fruits in Cleveland. Approximately 85 percent of this volume was purchased direct from shippers. Wholesalers were the most important source of supply for other retailers and out-of-town buyers.

FIGURE 4

KANSAS CITY: Marketing Channels for Citrus Fruits

December 1946 to March 1947

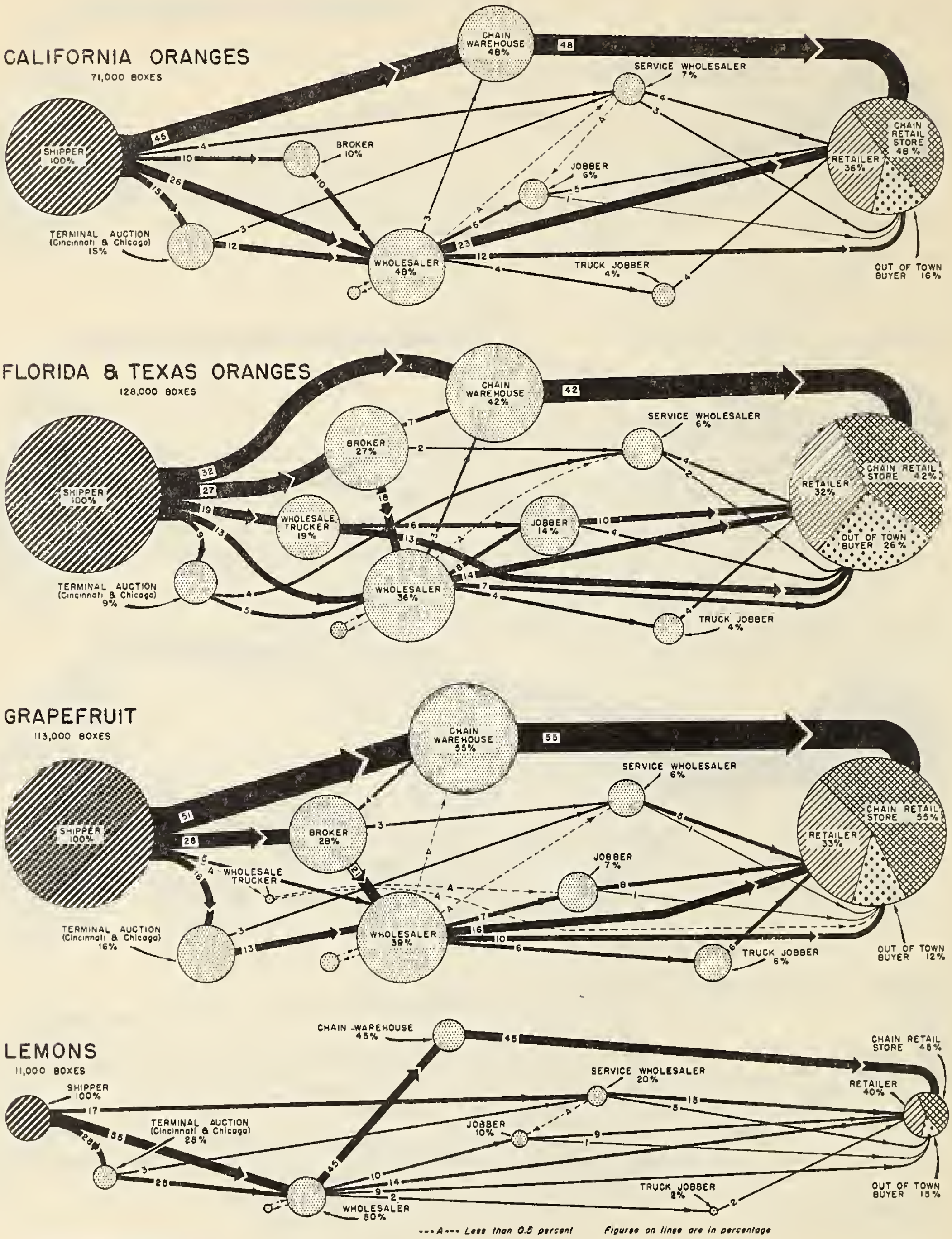


Brokers were more important factors in the distribution of citrus fruits in Kansas City than they were in the three large auction markets. Over one-half the grapefruit and approximately one-third of the Florida and Texas oranges and lemons were sold through brokers to wholesalers and service wholesalers.

FIGURE 5

INDIANAPOLIS: Marketing Channels for Citrus Fruits

December 1946 to March 1947



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Wholesale truckers transported 19 percent of the Florida oranges sold in Indianapolis and distributed them at the terminal market mainly to out-of-town buyers and jobbers. Several wholesalers and service wholesalers made regular purchases of citrus fruits at the Cincinnati auction and occasional purchases at the Chicago auction and trucked these supplies to Indianapolis for distribution.

Table 1. - *Methods of purchasing or handling citrus fruits by wholesalers in five terminal markets, December 1946, to March 1947*

Market and type of citrus	Received from shippers				Purchased at auction	Purchased from terminal handler	Total
	Outright purchase	Commission basis	Joint account	Through broker			
	Percent						
New York:							
California oranges--	25	-	-	-	75	(1)	100
Florida and Texas oranges----------	16	6	7	(1)	71	(1)	100
Grapefruit---------	14	3	5	11	67	(1)	100
Lemons-------------	-	-	-	-	100	(1)	100
Chicago:							
California oranges--	5	40	4	(1)	49	2	100
Florida and Texas oranges----------	15	62	1	(1)	20	2	100
Grapefruit---------	21	40	-	2	27	10	100
Lemons-------------	-	33	7	-	51	9	100
Cleveland:							
California oranges--	20	-	-	-	78	2	100
Florida and Texas oranges----------	3	15	-	2	76	4	100
Grapefruit---------	13	13	-	2	70	2	100
Lemons-------------	-	-	-	-	98	2	100
Kansas City:							
California oranges--	84	-	-	10	-	6	100
Florida and Texas oranges----------	35	8	-	45	-	12	100
Grapefruit---------	12	9	-	69	-	10	100
Lemons-------------	62	-	-	35	-	3	100
Indianapolis:							
California oranges--	53	-	-	20	25	2	100
Florida and Texas oranges----------	26	8	-	48	13	5	100
Grapefruit---------	9	3	-	51	32	5	100
Lemons-------------	68	-	-	-	31	1	100
Total:							
New York-----------	16	4	5	3	72	(1)	100
Chicago------------	13	47	2	1	32	5	100
Cleveland----------	11	10	-	1	75	3	100
Kansas City--------	39	6	-	46	-	9	100
Indianapolis-------	28	4	-	41	23	4	100

[1]Less than 1 percent.

existed between markets and between types of fruit. In Chicago, wholesalers handled nearly 80 percent of the direct receipts from shippers on either a commission or joint account basis. In many cases the wholesaler had some direct connection with the shipper. Except in Chicago, wholesalers handled only Florida and Texas citrus on a commission or a joint account basis.

Wholesalers in Kansas City and Indianapolis purchased more than 50 percent of their supplies of Florida and Texas citrus fruits through brokers but only from 10 to 20 percent of the California oranges were bought by this method. In the three auction markets, broker sales to local wholesalers were negligible. Brokers in each of these markets sold a substantial volume of citrus to wholesalers in other cities. These quantities are not included in this report.

MARGINS

Gross margins of wholesalers, service wholesalers, and jobbers are shown in tables 2 and 3. The average margin per box for handling all citrus fruits for wholesalers was 44 cents, service wholesalers 58 cents, and jobbers 61 cents[3] (table 2). Service wholesalers and jobbers generally performed more services in handling citrus fruits than wholesalers and, therefore, required a greater margin to cover costs. They supplied mainly retail stores, some of which were rather small. Service wholesalers in particular delivered practically all their fruits and other produce to retailers, both in the city and to outlying areas. Wholesalers bought and sold in larger lots and made fewer sales for a comparable volume of business.

[3]Margins of chain warehouses are not shown since most corporate chains do not separate wholesale and retail margins.

Table 2. - *Citrus fruit margins for wholesalers, service wholesalers, and jobbers in five terminal markets, December 1946 to March 1947*

Margins by type of handler	California oranges	Florida and Texas oranges	Grapefruit	Lemons	Average
Margin per box:					
Wholesaler	$0.39	$0.47	$0.39	$0.66	$0.44
Service wholesaler	.50	.64	.59	.66	.58
Jobber	.33	.75	.47	1.23	.61
Average	.41	.51	.42	.68	.47
Margin as percent of sales:					
Wholesaler	7	12	12	9	10
Service wholesaler	9	14	17	8	12
Jobber	6	19	13	18	15
Average	7	13	13	9	11

California oranges were handled for a smaller gross margin than Florida and Texas oranges. The percentage markup for California oranges also was lower. The higher price of these oranges and the competition with oranges selling at a lower price may have been factors in the smaller margin. Florida and Texas citrus fruit appeared to offer greater opportunity for speculative profit. These markets were supplied by a large number of shippers not all of whom would be selling oranges of comparable grades and sizes at similar prices.

Margins were highest in Cleveland and lowest in Indianapolis (table 3). There was no significant difference between wholesaler margins in New York, Kansas City, and Cleveland.

Table 3. - *Average margins of wholesalers and jobbers for all oranges, grapefruit, and lemons in five terminal markets, December 1946 to March 1947*

Margins by type of handler	New York	Chicago	Cleveland	Kansas City	Indianapolis
Margin per box:					
Wholesaler	$0.49	$0.39	$0.55	$0.51	$0.30
Jobber	.63	.58	.92	.40	.82

The proximity of the Cincinnati and Chicago auctions affected both prices and margins in Indianapolis. Wholesalers bought citrus both in carlots and at auction depending somewhat upon the price level and the trend in prices. In periods when prices were declining some wholesalers, who normally bought in carlots, would obtain their supplies of oranges at auction since they were not always able to sell their carlot purchases on a declining market at prices which would offer them a normal return. Auction purchases also may have increased when prices were high because of the heavy investment required for a carlot purchase.

Margins of individual handlers varied widely (table 4). Six handlers had average margins of less than 20 cents per box for all citrus fruits and 9 over 80 cents per box. Approximately one-half of these handlers

Table 4. - *Variation in margins of wholesalers, service wholesalers, and jobbers in five terminal markets, December 1946 to March 1947*

Margin	Wholesaler	Service Wholesaler	Jobber	Total
Cents per box	Number			
Below 20	6	-	-	6
20-39	5	2	3	10
40-59	8	1	2	11
60-79	4	2	1	7
80 and over	4	1	4	9
Total	27	6	10	43

had margins between 20 and 60 cents per box. The short period in which these data were taken undoubtedly accounts for some of the variation. However, the type of fruit handled as well as judicious buying and aggressive selling could account for the wider margins obtained by some handlers.

It is of interest to compare these margins with those permitted under wartime maximum price regulations. The OPA margins for wholesale merchants at specific periods in 1944 are shown in table 5. These are comparable with the wholesaler margins indicated in table 2. The margins were the same for California oranges. Postwar average margins for Florida oranges and grapefruit appear to have been somewhat higher while lemon margins were lower.

The OPA margins were the maximum and not necessarily the actual margins received by wholesalers, whereas the margins shown for the 1946-47 period were average margins. Undoubtedly margins of individual wholesalers were much more uniform when maximum price regulations were in effect.

Table 5. - *Wholesale margins in 10 cities according to maximum price regulations in effect February 23, and April 14, 1944*[1]

Margins	California oranges	Florida interior oranges	Grapefruit	Lemons[2]
Margin per box--------------	$0.38	$0.38	$0.33	$0.48
Margin as a percent of sales	7	8	8	7

[1]The 10 cities were Baltimore, Boston, Chicago, Cincinnati, Cleveland, Detroit, New York, Philadelphia, Pittsburgh, and St. Louis.
[2]November 1 to April 30.

Source: *'Readjustment in Processing and Marketing Citrus Fruits,' USDA, BAE July 1946. pp. 68, 69, 71.*

COSTS

The estimated cost of handling citrus fruits by various types of wholesale handlers is shown in tables 6 and 7. Warehousing and overhead costs include unloading into the store, stacking, loading out, office and selling expense, and the chain buying affiliate expense for chain warehouses. The costs shown for the auction include the charges of the receiver, the auction selling charge, and the cost of handling the fruit from the auction display room to the buyer's truck. No attempt has been made to relate costs to margins because of the limitations of the data. The cost figures included herein are useful mainly to indicate the relative expense of performing the various functions of wholesaling.

The estimated costs of wholesalers shown in table 6 varied from 24 to 30 cents a box, whereas in table 7 the average cost of wholesalers in all markets was 46 cents per box. This difference is in the delivery costs of wholesalers. The data in table 6 show the difference in cost between markets and in this table the expense of wholesale delivery was included

Service wholesalers located in modern warehouses, equipped with labor saving devices such as the pallets and conveyors shown here, can reduce marketing costs by direct buying and distribution and improved handling methods. Picture on lower left courtesy United Fruit & Vegetable Association.

Table 6. - *Estimated cost per box of handling citrus fruits by type of handler in 5 terminal markets, December 1946 to March 1947*

Type of handler	New York	Chicago	Cleveland	Kansas City	Indianapolis
Auction:					
Receiver------------------	$0.06	$0.06	$0.06	-	-
Selling-------------------	.06	.06	.07	-	-
Handling------------------	[1].08	.04	.03	-	-
Total------------------	.20	.16	.16	-	-
Broker:					
Total[2]----------------	.02	.01	.01	$0.02	$0.02
Wholesaler:					
Unloading cars------------	.02	.04	.03	.04	.03
Trucking to store---------	.06	.07	.05	-	.02
Warehousing and overhead--	.15	.14	.12	.15	.16
Wholesale delivery--------	.03	.05	.05	.05	.05
Total------------------	.26	.30	.25	.24	.26
Jobber:					
Total------------------	.46	.54	.39	.39	.38

[1]Includes charge for owner's cartage.
[2]Average cost based on total quantities handled by wholesalers and chain store warehouses. Brokerage charges usually average about 5 to 7 cents per box or $25 to $35 per car.

in the total. In table 7 average costs of the various types of handlers are compared and for this reason retail rather than wholesale delivery costs are included. The retail delivery cost for wholesalers was 23 cents a box and the wholesale or intermarket delivery cost ranged from 3 to 5 cents a box.

Table 7. - *Estimated cost per box of handling citrus fruits by type of handler, average of five terminal markets, December 1946 to March 1947*

	Wholesaler	Service wholesaler	Chain warehouse	Voluntary chain warehouse	Jobber
Trucking to store-----------	$0.05	-	-	-	-
Unloading cars--------------	.04	{$0.43	$0.03	{$0.24	-
Warehousing and overhead----	.14		[1].22		-
Retail delivery-------------	.23	.23	.18	.14	-
Total------------------	.46	.66	.43	.38	$0.47

[1]Includes chain buying affiliate expense.

Inefficiencies at wholesale markets are caused mainly by inadequate and antiquated markets, that lack direct rail unloading facilities, and have insufficient space for maneuvering modern trailer trucks.

Construction of up-to-date terminals with ample truck space and adjacent railroad sidings as illustrated here should bring about lower costs of wholesaling.

Intermarket hauling and delivery accounted for one-third to one-half of the wholesaling cost. Kansas City had direct rail unloading facilities at the wholesale terminal. In the other four markets, citrus fruit was trucked from team tracks or the auction to the terminal market.

The operating cost of any particular group of wholesale handlers does not appear to be excessive in relation to the cost of other groups (table 7). Inefficiencies in the wholesale market appear to stem more from inadequate and antiquated facilities and duplication of services than from any excessive cost of individual wholesalers. Modern terminal markets and integration of functions should lower the cost of handling citrus fruit at wholesale.

APPENDIX

Definition of Handlers

Wholesalers	Firms that buy in carlots, lcl or at auction and that sell principally to jobbers and other wholesale buyers. Generally they deliver only to wholesale buyers.
Service wholesalers	Wholesalers that generally buy in carlots, but may also buy at auction and from wholesalers. They handle complete line of fresh fruits and vegetables and sell and deliver almost entirely to independent retail buyers.
Terminal shippers	Firms that buy in carlots at auction or from wholesalers. They deliver and sell mixed loads of fresh fruits and vegetables to out-of-town buyers.
Voluntary chains	Cooperative buying wholesalers for groups of independent retailers.
Jobbers	Firms that buy at auction and from wholesalers, jobbers, or truckers, and sell mainly to retailers.
Truck jobbers	Small jobbers sometimes called merchant truckers who buy at auction or from wholesalers and jobbers and deliver to retailers.
Purveyors	Firms that supply hotels, restaurants and institutions. They buy principally at auction or from wholesalers.
Out-of-town-buyers	All buyers located outside the metropolitan area that buy at auction or from wholesalers. They are predominantly wholesalers or jobbers but some are local chains and independent retailers.